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EXECUTIVE SECRETARIAT

ROUTING SLIP

TO:		ACTION	INFO	DATE	INITIAL
1	DCI				
2	DDCI				
3	EXDIR				
4	D/ICS				
5	DDI		X		
6	DDA				
7	DDO				
8	DDS&T				
9	Chm/NIC		X		
10	GC				
11	IG				
12	Compt				
13	D/OCA				
14	D/PAO				
15	D/PERS				
16	D/Ex Staff		X	21 JUL 1987	
17	NIO/ECON		X		
18	NIO/S&T		X		
19	D/OSWR		X		
20					
21					
22					
	SUSPENSE	OBE Date			

Remarks

To 17: We received no phone notification of this meeting and received the agenda paper at 1700 hours today.

Executive Secretary

20 July 1987

Date

3637 (10-81)

STAT

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THE WHITE HOUSE
WASHINGTON

Executive Registry
87-2770X

CABINET AFFAIRS STAFFING MEMORANDUM

Date: July 17, 1987 **Number:** 490,672 **Due By:** _____

Subject: Economic Policy Council Meeting

-- July 20, 1987 -- 2:00 p.m.

	Action	FYI
ALL CABINET MEMBERS	☐	☐
Vice President	☑	☐
State	☑	☐
Treasury	☑	☐
Defense	☑	☐
Justice	☑	☐
Interior	☐	☐
Agriculture	☑	☐
Commerce	☑	☐
Labor	☑	☐
HHS	☐	☐
HUD	☐	☐
Transportation	☑	☐
Energy	☑	☐
Education	☐	☐
Chief of Staff	☑	☐
OMB	☑	☐
UN	☐	☐
USTR	☑	☐
CIA	☑	☐
EPA	☐	☐
GSA	☐	☐
NASA	☐	☐
OPM	☐	☐
SBA	☐	☐
VA	☐	☐

	Action	FYI
CEA	☑	☐
CEQ	☐	☐
OSTP	☐	☐
_____	☐	☐
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Carlucci	☑	☐
Cribb	☑	☐
Bauer	☑	☐
Dawson *(For WH Staffing)*	☑	☐
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Executive Secretary for:		
DPC	☐	☑
EPC	☑	☐
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REMARKS: The EPC will meet with the President on Monday, July 20, 1987 at 2:00 p.m. in the Cabinet Room. The agenda and paper are attached for your review.

RETURN TO:

☑ Nancy J. Risque
Cabinet Secretary
456-2823
(Ground Floor, West Wing)

☐ Associate Director
Office of Cabinet Affairs
456-2800
(Room 235, OEOB)

DCI EXEC REG

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THE WHITE HOUSE

WASHINGTON

July 17, 1987

MEMORANDUM FOR THE ECONOMIC POLICY COUNCIL

FROM: EUGENE J. McALLISTER EM

SUBJECT: Agenda and Paper for the July 20 Meeting

The agenda and paper for the July 20 meeting of the Economic Policy Council are attached. The meeting is scheduled for 2:00 p.m. in the Cabinet Room.

The single agenda item will be superconductivity. A paper from the Council outlining the proposed superconductivity initiative is attached.

attachment

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ECONOMIC POLICY COUNCIL

July 20, 1987
2:00 p.m.
Cabinet Room

AGENDA

1. Superconductivity

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THE WHITE HOUSE

WASHINGTON

July 16, 1987

MEMORANDUM FOR THE PRESIDENT

FROM: THE ECONOMIC POLICY COUNCIL

SUBJECT: Superconductivity

Over the past year, we have witnessed some truly remarkable scientific breakthroughs in the field of superconductivity -- the ability to conduct energy with no resistance or heat loss. Scientists have raised the temperature at which superconductivity occurs from approximately -424°F to -250°F, and there are strong hints that we may achieve superconductivity at room temperature. At the same time, scientists have been working to develop superconducting materials that carry more current and are less brittle, increasing the potential for commercial applications.

The private sector is very active in this field. The initial discovery that superconductivity could occur at higher temperatures was made by IBM at a lab in Zurich. Other large U.S. companies, such as AT&T, General Electric, and Westinghouse have been leaders in the field of superconductivity research for many years. U.S. industry has invested more than $100 million in superconductivity research over the past year alone.

The Federal Government also has played a key role in these developments through funding of basic research. The National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) both provided funding for Dr. Paul Chu at the University of Houston in his landmark efforts in raising the temperature at which superconductivity occurs. The Federal Government is currently spending approximately $45 million in superconductivity research, with nearly one-half of that reallocated within the last six months.

COMMERCIALIZING SUPERCONDUCTIVITY

These scientific advances raise exciting possibilities for improving the quality of life, if they can be translated into commercial uses. For example:

- Electricity could be transmitted without heat loss -- which would avoid the twenty percent waste when power is transmitted long distance over state-of-the-art copper high tension wires. This could save billions of dollars for consumers and allow power generators to be located far from high-density population areas.

- High temperature superconductivity could be the most important electronics breakthrough since the transistor.

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Modern supercomputers would pale in speed and size next to computers incorporating circuitry and solid state devices such as "chips" that use superconducting materials. Supercomputers could be reduced in size to perhaps as small as a breadbox.

- Electric drive engines could replace internal combustion engines, revolutionizing the affordability and endurance of ground- and sea-vehicles. Dependence on oil could also be substantially reduced.

- Powerful electromagnets, using superconducting materials, could lift and propel passenger trains at speeds greater than 300 mph. This could give new life to train transportation long plagued by high fuel and hardware costs.

The Economic Policy Council has developed a series of policies that would help the private sector in its efforts to commercialize superconductivity. We have identified three objectives for Federal action:

1. Promote greater cooperation among the Federal Government, academia, and U.S. industry in the basic and enabling research that is necessary to continue the remarkable scientific breakthrough in superconductivity;

2. Enable our private sector to more rapidly exploit scientific advances and put more products on the market and processes into use; and

3. Better protect the intellectual property rights of scientists, engineers, and businessmen working in superconductivity.

The Council is unanimous in its belief that it is critical that the U.S. translate our leadership in science into leadership in commerce. Superconductivity presents an opportunity to prove that our free market system can compete with more government directed systems, particularly in high technology products. Ultimately, our success in superconductivity will depend on our corporate leaders, who will make the critical decisions on how much capital, time, and effort to invest in commercializing superconductivity.

THE SUPERCONDUCTIVITY INITIATIVE

The Economic Policy Council is unanimously recommending the following Superconductivity Initiative that you would announce at the "Federal Conference on Commercial Applications of Superconductivity," July 28, 1987. This Initiative includes both legislative and administrative actions. The Council recommends that we combine the legislative actions -- some of which were included in your Trade, Employment and Productivity Act of 1987 -- into a single Superconductivity Act.

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The major components of the Superconductivity Initiative include:

Legislative

1. Amending the National Cooperative Research Act (NCRA) to expand the concept of a permissible joint venture to include some types of joint production ventures. This is a particularly important step that would ease the burden of unnecessary antitrust restraints. If enacted, it could benefit not just superconductivity, but other high technology products.

2. Amending U.S. patent laws to increase protection for manufacturing process patents. This would enable U.S. owners of process patents to obtain damages for infringement where products made with those processes are imported into the U.S.

3. Authorizing Federal agencies to withhold from release under the Freedom of Information Act (FOIA) commercially valuable scientific and technical information generated in Government laboratories that if released, will harm U.S. economic competitiveness.

Administrative

4. Establishing a "Wise Men" Advisory Group on Superconductivity under the auspices of the White House Science Council. This would be a small group of three to five people from industry and academia that would advise the Administration on research and commercialization policies.

5. Establishing a number of "Superconductivity Research Centers" (SRCs) and other similar groups that would: (1) conduct important basic research in superconductivity; and (2) serve as repositories of information to be disseminated throughout the scientific community.

   a. The Department of Energy will establish three SRCs, as well as a computer data base:

      -- Center for Superconductivity Applications at the Argonne National Laboratory;

      -- Center for Thin Film Applications at the Lawrence Berkely Laboratory;

      -- Center for Basic Scientific Information at the Ames Laboratory;

      -- Computer Data Base on Superconductivity at the Office of Scientific & Technology Information.

   b. The Department of Commerce (DOC) will establish a Superconductivity Center at the National Bureau of Standards (NBS) laboratory in Boulder, Colorado. The

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centers will focus on electronic applications of high temperature superconductivity.

c. The National Aeronautics and Space Administration (NASA) is establishing a coordinating group on superconductivity activities at its office of Aeronautics and Space Technology.

d. The National Science Foundation (NSF) will augment its support for research in high temperature superconducting programs at three of its materials research laboratories using teams of chemists, physicists, materials scientists, and engineers. In addition, NSF is initiating a series of "quick start" grants for researchers with good ideas for processing superconducting materials into useful forms including wires, rods, tubes, films, and ribbons.

e. The Department of Defense is expanding its activities on a broad front in the development of military applications of superconductivity, many of which have high potential for spin-off to the commercial sector.

6. Urging all Federal agencies to quickly implement the steps outlined in Executive Order 12591 designed to: (1) transfer technology developed in Federal laboratories into the private sector; and (2) encourage Federal, university, and industry cooperation in research. The White House Science Advisor will report to you by December 1, 1987 on progress in implementing the Executive Order, particularly with regards to superconductivity.

7. Directing the Patent and Trademark Office to accelerate the processing of patent applications and adjudication of disputes involving superconductivity technologies when requested by the applicants to do so.

8. Directing the National Bureau of Standards to accelerate its efforts to develop and coordinate common standards (e.g. measurement methods, standard reference materials, and supporting technical data) in the U.S. and internationally for superconductors and related devices.

9. Encouraging Federal agencies to continue to reallocate FY 1987 funds into superconductivity basic research, applied research in enabling technologies, and prototype development. Agencies are directed to place a high priority for this area in FY 1988 funding and FY 1989 planning.

10. Requesting that DoD accelerate prototype work in sensor, electronic, and superconducting magnet based military applications and that the Department of Commerce accelerate development of prototype devices in detection and measurement of weak magnetic fields.

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11. Using the renewal of the U.S.-Japan Agreement on Science and Technology to achieve reciprocal U.S. access to Japanese Government supported research & development, including superconductivity.

PRIZES

The Council unanimously agreed upon the eleven initiatives described above. The Council was divided on the question of whether the Federal Government should offer a substantial prize for future breakthroughs in commercialization. The idea of the prize is described below:

> Awarding five one-time prizes of $5 million each for significant commercial prototypes in the following fields: transportation; energy generation, transmission or storage; computers and communications; medical and scientific technology; and other applications.
>
> A private panel of experts would annually judge whether a prototype was worthy of the award. The panel would make its judgment based on three criteria: originality; how well the prototype works; and the potential widespread commercial application.
>
> Only individual Americans and resident aliens working in the U.S. would be eligible for the prize.

Advantages

- o A prize would focus public attention on the newest breakthroughs, establish a national goal, and possibly renew interest in science careers.
- o Prizes are a proven form of incentive, which have a long history in science.
- o The cost -- $25 million would be spread out over several years -- and would certainly be less than an industrial policy.

Disadvantages

- o Whoever develops the first commercial prototype will become wealthy even without the prize.
- o The dollar value of the prize is very high, particularly in light of the fact the National Medal of Science and the National Medal of Technology carry no cash awards.
- o A prize for superconductivity could raise demands for prizes in other research/commercial areas such as AIDs or might be criticized as gimmickry -- obscuring the value of the President's overall message on superconductivity.

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DECISION

_____ Approve the Superconductivity Initiative described above, without establishing a Federal prize for superconductivity.

_____ Approve the Superconductivity Initiative described above and establish a prize for superconductivity.

James A. Baker, III
Chairman Pro Tempore

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